EVENING PUBLIC MEETING

FALLS LAKE DAM HYDROELECTRIC PROJECT

FERC PROJECT NO. 13623

Presentations by: Thomas H. Tant, P.E.
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CITY OF RALEIGH

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GOMEZ AND SULLIVAN

TRANSCRIPT

OF

MEETING

At Raleigh, North Carolina
January 23, 2012 - 7:00 p.m.

Reported by:
Bryan Collins, CVR-CM

A T T E N D A N C E

Perry Allen, City of Raleigh

David Cox, Oak Croft/NORCHOA

Bruce Duncan, Black & Veatch

Jason George, Gomez and Sullivan

Marie Guziejka, River Mill COA

Wade Hamlett, River Mill COA

Kent Lackey, P.E., Black & Veatch

Reed Palmer, P.E., Hazen and Sawyer

Ken Parker, River Mill COA

Sharron Parker, River Mill COA

Gene Senecal, River Oaks/NORCHOA

Richard Stewart, P.E., Gomez and Sullivan

Thomas H. Tant, P.E., Hazen and Sawyer

Doug Timpe, Black & Veatch

Kenneth Waldroup, City of Raleigh

Randy Welch, Carolina Canoe Club

I, Bryan Collins, being a Court Reporter and Notary Public in and for the state of North Carolina, recorded the Evening Public Meeting - Falls Lake Dam Hydroelectric Project - FERC Project No. 13623 on January 23, 2012, at 7:00 p.m. at the E.M. Johnson Water Plant, 10301 Falls of Neuse Road, Raleigh, North Carolina.

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MR. TANT: All right, well, we're going to get cranked up. My name is Tom Tant. I work for Hazen and Sawyer. We are an engineering firm here in Raleigh. We've been working with the city of Raleigh on the pursuit of hydroelectric power at Falls Dam now, since it was initiated.

This phase of the project, we're going to kind of wrap up our part and another firm, Black & Veatch, has been retained by the city to pick up the ball and carry it on from this point forward, and we will be providing support to that firm. And so I tell you that just because when we get into some contact and some comment contacts, we'll see some folks other than us. So that's kind of where we are in the process.

A couple of admin type items: of course, we've got plenty of exits over here, to the side of the wall. There's a men's and ladies restroom out here, a water fountain. If for some reason we need to evacuate

the building, we'll exit out that way and we'll convene as a group out in the parking lot back towards the gate that you came in.

I'm going to pass around a sign-up sheet. It's probably made it. If you enter in the information there, as applicable, we'd certainly appreciate it. We've got a videographer. We also have a recorder in the back. This meeting, as well as a similar meeting that we had this morning, which was attended by a lot of agency folks from the regulatory community, is part of a FERC Federal Energy Regulatory Commission process, and so we are required to have transcripts of these meetings. So it's a little bit of a formal aspect of it, so when we get done if you have any questions or have any comments that you want to make, feel free to just say, "Hey," just state your name, make a comment or ask a question, and that way he can be sure and pick up the source of that. So that's what those folks are here to do.

Just entering the room here are three gentlemen that work -- I mentioned Black & Veatch would be handling the details of the project as we move forward. Each one of those three guys works for Black & Veatch. Reed Palmer, to my left here, works with me at Hazen and Sawyer. He'll be doing the bulk of the presentation. Jason George and Rick Stewart have worked

with us as well, and they'll be providing input as warranted.

So again, just a quick recap on the day. We had our meeting this morning. There was a site visit at 1:30 that a few folks attended, out at the dam site. And we'll be wrapping up this phase of pursuit of public comments, as Kenny mentioned, with this meeting. And certainly we want to give you guys any information that you need so that you can provide input to the process.

So with that, I'm going to turn it over to Reed.

MR. PALMER: Thanks, Tom.

Again, my name is Reed Palmer and we're here to talk to you today about the Falls Lake dam hydroelectric project. The city of Raleigh has been studying this for a while now and we've gathered up enough information that it's time to present this to the public and stakeholders for the first time so this is really, as Tom mentioned earlier today, we had a meeting for the agencies and any public that could make it at 10:00 a.m., and now this meeting here to really present this idea to all of you and see what you think, and let you ask questions.

So with that, the goals for today's meeting are we want to provide a description of the project,

explain the regulatory process, answer any questions that you might have, and then solicit your comments about the project. The agenda is going to be I'm going to give you all an overview of the project. It's going to include some background information on Falls Lake and the dam operations as it is now without any hydroelectric facility. Then I'll talk about the concept for the hydroelectric facility as it's been envisioned thus far, and I do want to mention it's in the early conceptual stage. Your input and the input from the agencies that we expect to receive after today's meetings can very much shape this project. It is by no means set in stone. It's a very flexible concept, at this point.

And then I'll talk to you about some of the proposed operations of this facility, a little overview of licensing process, an approximate project schedule -- again, this is very much subject to change. And at the end, get your feedback and input.

So a little background on this. Back in February of 2009, a private company called Community Hydro Limited applied to FERC for a permit to put a hydroelectric facility on Falls Lake. The city of Raleigh, being somewhat concerned that Falls Lake is its principal water supply, and seeing benefits to the city itself, which I'll talk about more later, decided that it

would file a competing application. And the city Council authorized that application in October 2009.

And a little more than a year later, FERC, the Federal Energy Regulatory Commission, awarded that preliminary permit to the city of Raleigh. And that FERC permit is under FERC Project No. 13623. That's important if you want to follow the proceedings of the project. And there's a handout at the end, so don't worry about taking notes. We've got some information that you can pick up in the front of the room that will let you follow the project, if you're interested in that after today.

The city sees this as an opportunity for clean energy generation. The way it's been envisioned thus far, it could potentially offset just under 4000 tons of carbon dioxide equivalents per year. That's how they measure the impact of power generation, is how much pollution is being emitted in terms of carbon dioxide, as they take other pollutants and they sort of make an equivalent in terms of greenhouse gases. And so our estimate is this project could offset about 4000 tons per year.

And it fits in nicely with the city's goals. The city has a sustainability initiative which Kenny may talk a little bit more about later. But one of those goals is to reduce fossil fuel emissions by 20 percent,

reduce greenhouse gas emissions in general, and this is something that the US Mayors Climate Protection Agreement has endorsed.

Now, we'll move into some background on the project. Falls Lake, as most of you probably know, is within the Neuse River basin. That's the outline in red, here. Falls Lake is well up toward the upper portion of that watershed. And the lake is primarily within Wake and Durham counties, but also extends just a bit into Granville County, as well.

No zooming in on Falls Lake itself, and the dam area in particular, what you see here is a satellite image. The dam is here, running up and down the stream. The album works, which the water that is being released from the lake into the Neuse River here passes through this outlet works, and I'm going to talk a fair amount about this particular structure throughout the rest of this talk.

The water passes through a tunnel underneath the dam, through a structure called the tailrace, which I'm going to show you a picture of in a moment, and then on into the Neuse River.

And I also mention, just so we understand the structures that are involved here, if there were to be an especially large flood event, that could not -- the Corps

of Engineers operating this outlet tower couldn't pass sufficient water to maintain the lake level at a level that they feel is safe, water would actually pass over this spillway, and into the river. But in the history of the project, that's never happened.

Now zooming here's a picture here from ground level of this outlet tower. A picture of the tailrace that I mentioned, so the waters passing from that outlet tower underneath the damn and out of this tailrace structure. And now, here's a picture of the tailrace from down at the bottom, looking up at the dam, and the water's coming through this tunnel out into the Neuse River.

The congressionally authorized purposes for the Falls Lake project, at the time of its creation, were for these five areas: flow control, water supply, wildlife enhancement, recreation, and water quality. That doesn't preclude the hydroelectric project, though. The regulations allow for a hydroelectric facility to fit into this mix of designated purposes.

I want to explain to you about sort of an accounting system that the Corps of Engineers uses for the volume that's contained within Falls Lake. At the bottom, there's sediment storage, which was laid out to -- because the Corps of Engineers envisioned sediment

coming in to Falls Lake throughout the life of the project. And in moving up, these next two in the green box and the yellow box, are collectively known as conservation storage. On the left we have water supply storage. That's the area in green, and that's about 42 percent of the conservation core volume. And I should mention that the water supply storage is not withdrawn from that outlet structure that I showed before. The city has a separate withdrawal structure that's about -- I think it's about a half-mile upstream, in the middle of the lake, that it uses for withdrawing water supply. So any water withdrawn for water supply for the city and surrounding communities that it serves, we would not be able to generate electricity with it.

However, the next two pools, the water quality storage, which is used to maintain stream flow in the Neuse River, downstream of the dam, and maintain habitat quality in the riparian environment, that does pass through the outlet structure. And this is part of the water being envisioned being used to generate electricity. The flood storage pool is normally the Corps tries to keep it empty so that there is capacity to absorb a large flood event. That flood storage also passes through that outlet tower and we envision the water that passes through that structure being, again as

I mentioned, generating electricity. And I'll just point out that the Corps tries to keep the lake at an elevation of 251 and a half feet mean sea level, as best they can.

Now, let me go back just a second. I want to talk about how this water quality storage pool is used in a little bit more detail. Up here, we've got Falls Lake, just a map, mostly in Wake County. Water is released from the water quality pool into the Neuse River and it flows downstream, and there is a flow target down here in Clayton, North Carolina, in Johnston County. And the Corps of Engineers tries to maintain the flow at the Clayton target of no less than 184 cubic feet per second from November to March, and 254 cubic feet per second from April through October.

When there is sufficient flow coming in from the intervening 250 or 300 square miles of drainage, there is still a minimum release from the dam that must occur. And that's seasonal, as well. 50 to 65 cubic feet per second from November to March and 100 cubic feet per second from April through October. So these flows that are being released from Falls Lake, again, the plan is to generate electricity with that water that's being released from the dam.

So again, I've sort of alluded to this already but the idea is to install hydropower turbines

and we think, at least at this preliminary stage, that the best way to do that is to put those turbines on the outlet tower, and I'm going to describe that in more detail in a bit. And then generate electricity with water that's released from the water quality pool, and the flood control pool. We envision no alteration of the dam release rate. The releases would occur just as they do today, with the flow targets that I mentioned earlier. We'd generate renewable and greenhouse gas emission-free power with the water that's, like I said, already being released by the Corps of Engineers, from the dam.

The city would sell that power to a utility or potentially supply its own facilities directly. And hydropower generation will be secondary to meeting the city's water supply needs, and to Army Corps reservoir operations.

So I'm going to show you some slides that are based on the concept that is currently being implemented at Jordan Lake. And we envision something similar here but that's not to say that it won't change in the future based on additional analyses that these folks with Black & Veatch are going to do. But we think this is a pretty good concept. What these are is these are towers that would be completely submerged in the water. The water level will be somewhere up here. And this would be

submerged and the water would enter this shaft and flow down, and there will be a turbine down here, and that turbine would spin as the water passed it, and then it would pass through the outlet tower, just as it does now.

So this next slide is going to show you -- again, here's the outlet tower again. This is how these turbine generator structures would be affixed to the outlet tower. The gray portion here essentially shows you what's already there. And then these two generator/turbine combinations would be affixed to the front face of the dam. So if I go back, it would be about here, on the front side of it.

So I want to show some pictures of it looks like at Jordan Lake now. At Jordan Lake, this is pre-project. Looks a lot like the Falls Lake outlet structure. It's a bit bigger. Then, this is a picture we took in May of last year. As they were well under construction, they floated this barge out here and attached it to the outlet structure, and they're putting some steel structure to support the generator and the turbine that I showed you the schematic of earlier. Here's a picture of it. I think this is even a better picture of it. You can see a generator here, and then that structure, the shaft and the turbine is, of course, all submerged.

They're still doing work on it. This is a picture that I took on Friday morning. It's still got the crane out here. However, it was actually operating. It's to the point where they were generating electricity. And here's another picture of it from behind. When the project is finished, they're going to take this barge off, so all that will be left is this piece, this steel structure. You'll be able to see the generator, but this not-quite-so-aesthetic barge will be gone.

I also mentioned that they put a power control structure on the outlet tower here. That's also part of the hydroelectric project at Jordan Lake.

So up to this point, we have done what's called a pre-feasibility analysis. That analysis, we identify different alternatives for ways that we can get water to turbines and generators. We looked at a couple of those. We estimated how much power might be produced from it and consequently, how much revenue might be generated. We also estimated the development cost for a couple different alternatives. And this assessment is being used by the city to decide, is this idea economically feasible or not?

And then based on this pre-feasibility analysis that was already done this, say, the past six months, decided that the option that I just described,

putting a hydroelectric facility on the front of the outlet tower, is marginally economically feasible. So in this next stage of evaluations, they're going to really hone in on that and try to figure out whether it's economically feasible or not. It seems to be borderline at this point.

Now, a little bit about the licensing process. So the city received a preliminary permit, as I mentioned. I think that was in November 2010. They have three years to complete the permit application with FERC -- that's the Federal Energy Regulatory Commission. And so that expires in November 2013. They've got to be done with it, and file a license application by that point, or they lose the permit and somebody else can come in and file a permit to do the project.

The licensing process involves a feasibility study, a more detailed feasibility study is going to be done in the coming year. A pre-application document was already developed and it was filed with FERC in October of 2011. And I'll explain to you in a bit, if you're interested in viewing the document, how you can get to it on the Internet.

A notice of intent to proceed with that evaluation in the permit process was also filed. And they were using what is known as the traditional

licensing process. If you look on FERC's website, you'll see there's also an integrated licensing process, and another one, but the city has been granted a right to use the traditional licensing process.

Here is a very rough schedule of what's going on. I've talked about some of these early engineering feasibility studies that have been done, and this licensing process that's starting now. The license application has to be done here but there's a FERC review that happens after that. And then at the, you know, later dates, a lot of the financing would need to be arranged; bonds, figuring out operations, power purchase agreements with utilities, final engineering designs, sales agreements, and then construction of the project. It's a big window. This is not going to be built and online anytime soon. We have 2018 here. That could shift a year one way or another, but it's not going to happen soon.

Zooming in on just the next six months, today is the day of the joint meeting and we're at the public meeting in the evening. Over the next few months there are going to be some informal meetings with agencies. Within 60 days, and this is important, stakeholder study requests are due. If any of you are interested in seeing studies done that aren't being requested by the agencies,

you have 60 days to let the city know what you want to do and we can talk about that and a little bit more detail.

Then after that, planning those studies and other stakeholder meetings will continue throughout the first half of this year. A draft feasibility report is going to be prepared, and talks with the Army Corps of Engineers -- you see this acronym in my presentation quite a bit, U.S. Army Corps of Engineers, so we'll be talking to them, as well.

So this pre-application document, or PAD, as it's known, it included background information on Falls Lake and the surrounding areas, it included preliminary evaluation of these areas, geology and soils, water resources, fish and aquatic resources, wildlife, wetlands, riparian habitats, rare, threatened, and endangered species that are in the area, recreational land use, and aesthetic, cultural, socioeconomic, and tribal resources.

It also identified potential impacts of the project, and it describes some proposed studies to be done to address those impacts.

Issues identified after the pre-application document was filed: reservoir quality and releases, endangered species protection. Somebody asked about noise. Downstream, impacted downstream aquatic habitat.

Fish passage has been brought up by one of the agencies or several of the agencies. And cultural and tribal resource impacts, as well.

The folks with Black & Veatch have proposed this set of studies to do. They want to do some studies on water resources, figure out what the impacts to water quality are as particularly during construction and operation. Because the project isn't proposing to change the releases at all, envisioned impacts would only occur during construction.

Identification of construction-related in-stream flow maintenance measures. While they're working on that tower, they may have to bypass flow in order to maintain flow in the Neuse River. They will do fish and aquatic resource studies and include impact analysis and identification of potential measures to protect fish. Recreation impact analysis and aesthetic resources impact analysis.

So this, today, opens up the comment process. Again, this is a first stage consultation with the public. As I mentioned before, study requests are due within 60 days. They have to be submitted by March 23. I've got some handouts in front of the room that are going to describe what you need to do if you want to request information, or a study to be done.

And again, if you've got -- other than study requests, just general comments -- or study requests, they are to be addressed to the city of Raleigh. Under this traditional licensing process, you're supposed to bring them up with the city of Raleigh, not with FERC, at this point. Anybody is welcome to provide comments on this project. And we invite them. Please comment if you have ideas.

Now, I'm not going to read through this but this is more for the agencies if they are going to request studies. But if you're going to request a study, you need to identify why it's necessary, the basis for the study, study methodology, and explain how the study information will be used in furthering resource goals. There's a handout up here. If you're interested in making a study request, that has this slide, so you don't have to write this information down. And here is contact information for submitting comments, or study request, or any questions that you might have after you leave this room. As part of the official process, you need to submit those to the city of Raleigh, and you can address them to Kenny, sitting here. His e-mail address is there. And we ask you to please also copy or address your questions and comments to Kent Lackey with Black & Veatch. He's sitting in the back of the room, and his e-

mail address is there. And that will just help things moved smoothly because Kent and Black & Veatch are going to be conducting studies and addressing comments.

If you are interested in additional information on the licensing process, you can go to FERC's website. Again, the project number is 13623. We've also got a handout up here from FERC. These are pamphlets that FERC provides, and it's entitled "Hydropower Licensing; Get Involved, a Guide for the Public." Now, it's got a lot of information about the integrated licensing process. So please, you know, use the information that we're providing but -- it's got the project number and contact with FERC, if you're interested in getting in touch with somebody on this project. So if you're interested in that, you may take this information with you.

You can sign up on FERC's website to find out when anything is officially filed under this project. They'll send you an e-mail letting you know that a new document has been submitted. And again, I just mentioned this brochure about how to get involved.

And that wraps up our presentation tonight. We'd like to take your questions and receive your comments at this point. Again, please state your name before you ask a question, just so that we can have a

record of it.

MR. COX: Okay, my name is David Cox. Question about distribution of electricity: do you have to build a distribution substation of any sort, in order to distribute the electricity?

MR. WALDROUP: Well, let's go to the picture of -- do you want to go ahead and pull up the --

MR. PALMER: You want the slide that shows that subdivision?

MR. WALDROUP: Yeah, this is Kenny Waldroup with the city of Raleigh, for the record. If we're following the model from Jordan, there would be a rather large transformer pad. We hope -- we don't know, but we hope that the relatively minimal size of our project will allow us to attach to nearby infrastructure, existing overhead power lines, to deliver power back to the grid. That's one of the things we are going to investigate, moving forward.

MR. PALMER: And there is an existing transformer here on the other side of the dam. Does 700 feet sound right, Rick? 700, 750, something like that?

MR. WALDROUP: Yeah.

MR. STEWART: Yeah.

MR. PALMER: It's not very far from the outlet tower here. And again, this has to be worked out

with the Corps of Engineers, but we envision this being buried, not overhead.

MR. COX: The transformer will be buried?

MR. PALMER: No, there's actually --

MR. WALDROUP: A pad mounted --

MR. COX: How big is the transformer?

MR. WALDROUP: Well, if you look at the one over at Lake Jordan, and that project is about a third more in size than the project we're proposing, I would say that it is two these tables placed together, and about that high.

SPEAKER 2: All right.

MR. PALMER: We'll show the picture of them.

MR. WALDROUP: Just for my own education, how many folks are water and sewer customers of the city of Raleigh, or live within the city limits?

[SHOW OF HANDS]

MR. WALDROUP: Doesn't matter, because I'll be -- I want to share some additional information with you. Yes, there is a 60 day time frame for the FERC permitting process, but we also have a fiduciary responsibility to you as ratepayers, and to our city Council. So there will be the additional opportunities

that you, as citizens, and especially the citizens that are electing our council folks and paying our rates will have to speak about the merits of the project. So I wanted to make that clear.

And it's not like we have no concern for the folks that live outside of our service area, because they are our neighbors.

VOICE: What if you're in an EPJ [PH]?

MR. WALDROUP: That makes you just as important as anybody else in the room, and that's very important to us. Because quite honestly, EPJ means you might be in our service area.

The concept that I wanted to get across to you is what started this project. The purpose was protecting the most valuable resource that you have, and that's the water supply in Falls Lake. It's literally hundreds of millions if not billions of dollars worth of water resource there for us. We are looking at building a new reservoir, at quarter of a billion dollars, that has a fraction of the storage capacity of the falls.

So we were very concerned that a private entity may take advantage of some very lucrative tax rebates and federal programs, or rising energy prices, to place a hydroelectric project on the damn, and then be part of a team that advises the Corps of Engineers on how

much to release from -- the Corps does have an operational plan that they use and it dictates, in general, what they release and when. But they have discretionary authority. And they exercise that authority on behalf of the city of Raleigh and on behalf of resource and permitting agencies to retain just a little more water in Falls Lake then they absolutely have to, during certain parts of the year.

And that has translated, in our mind, to a safer yield, a larger reliable yield in the reservoir. We're not allocating that out. That just means when a drought comes along we have a few more days of water supply. And that's critical to us.

We are suggesting that we, if we're successful in building the hydroelectric project, we're not going to change any operational parameter of the dam. We're very happy with that.

MR. SENECAL: My name is Gene Senecal. I'm the president of the River Oaks Homeowners Association, and I just have a quick question. The actual reservoir pool itself, it's been documented in the paper and everything else, that it's a lot shallower than what originally had been hoped for, because of the maps that we use and everything else. Are there any plans on increasing the depth of that pool? So this is just

living within the confines of where we are today?

MR. WALDROUP: That's correct, sir.

MR. SENECAL: And you're also saying that right now, it's kind of marginal this way, that way? What if the city decided it's not feasible? Does that in turn open up the doors for a private enterprise to come in?

MR. WALDROUP: Yes, it does, sir. But in our case, I believe not feasible for the city will also mean that it will be not feasible for a private entity. We started this project as a means to protect our water supply but as we moved through the evaluation, we realized that this would be a responsible means to address ever-increasing power cost. The facility that you're at, the city's largest water treatment plant, we use about $3 million worth of electricity, just at this facility and a couple of ancillary water pumping facilities that are associated with it; about 3 and a half, $3.3 million on our wastewater facilities. Our power rates are projected to increase from now to 2025 anywhere from 25 percent to 35 percent. So I could be looking at another $2,000,000 a year in our costs by 2025, and that's an optimistic projection.

So projects that would allow the city, which is a major power user, to reduce its overall power bill

and protect its water supply, that's a good fiduciary investment of ratepayer funds, if we can find the right rates and loans, if we can locate grant opportunities or work out partnerships with progress energy for favorable purchase of power. So that's the process that we're going to go through.

And another important part of that process is you. This is a marginal project. And our counsel will insist that we work well with our neighbors. And that at the end of the day, the proposed project is something that our neighbors would find acceptable.

VOICE: Funding for this is coming from the federal government?

MR. WALDROUP: Funding for this, if it's successful, will mostly come from rates and fees from the water and sewers. The idea being that by building a hydroelectric project, we will have better control of our electrical rates, what we pay in the increasing power costs in the future. But we will also seek partnership funding from Progress Energy and Duke Energy. We will seek to sell the renewable energy credits that are associated with a renewable project like this. We will seek to sell the greenhouse gas credits that are associated with this project.

So we'll do everything that we can, including

looking for federal grants, low-interest loans, to bring the most efficient balance sheet out of this project possible. And then we'll decide whether it's practical.

VOICE: Now, you mentioned about tapping into existing overhead lines.

MR. PALMER: Well, we haven't talked to the power companies like Progress Energy but that figure that I showed you before showed it connecting with an existing transformer. Whether that transformer and the associated power lines have the capacity to handle that hasn't been investigated at this point.

VOICE: So are the power lines at this dam that you can tap into? Are they underground?

MR. WALDROUP: There is existing overhead power that we hope --

VOICE: At Falls Dam?

MR. WALDROUP: At Falls Dam. There is a transformer. There is existing conductivity to the power --

MR. TANT: There's power -- distribution power up to this point right here. And that's a pad-mounted transformer right there, right beside the playground. And it's underground from here out. Now frankly, I'm not sure exactly where it switches to overhead. But we have hope that given the amount of

electricity that will be generated, that we can go and drop it on the grid at this location such that, you know, ideally, there's no facilities beyond this point required. But that's something that is going to warrant more evaluation.

MR. WALDROUP: I may be wrong but I thought the fact that -- that may be a pathway. I thought that was past this --

MR. COX: That's just a hiking path.

MR. TANT: -- [INAUDIBLE] and then it must drop down underground --

MR. COX: Yeah, I've been up there many a time and there's no overhead lines up there.

MR. TANT: Yeah, I think it must stop right under this, because I believe I can see it right here.

MR. WALDROUP: Well, our intention is to go on the grid as it exists today, and that's the closest transformer we've got.

MR. COX: Okay. I mean, I think the thing that we would want to avoid is having to construct overhead power lines.

MR. WALDROUP: I understand, Mr. Cox. And we would, too, because that's additional cost to the project.

MR. COX: Thank you.

MR. HAMLETT: My name is Wade Hamlett. How much electricity do you estimate that this thing will generate? Are we talking a couple hundred kilowatts, or --

MR. WALDROUP: It was 4.6 gigawatt hours a year. 4600 and some megawatt hours. Now, I did a back of the envelope calculation, so if I'm wrong it's on me. I think that's about 350 ohms a year.

MR. PALMER: Yeah, I did similar calculations last week and I came up with 430. And the actual capacity of the units would be a total of 1.7 megawatts. As envisioned here, again, there's going to be additional evaluation ongoing that may well change that. I don't think it's going to change it by, you know, an order of magnitude but it may shift around some.

VOICE: And how many megawatts is this place using in megawatt hours per year?

MR. WALDROUP: I would say it's in the neighborhood of 32- to 40,000 megawatt hours. So this project would be on the order of a 10th to an eight of the generation necessary to operate this facility.

But remember, this facility has to operate to provide water when power is most necessary. So we pay a significant power bill, on peak. One of the

opportunities we are exploring is can we change our rate structure by utilizing this alternative source.

MR. SENECAL: Is a fair assumption that says in the summertime, when your water levels are really going down, where your demand is probably your highest, that your ability to generate power is going to be probably close to its lowest? Is that a fair?

MR. TANT: I would say so, yeah.

MR. PALMER: Sounds reasonable. One thing to keep in mind is that any time the lake is below normal pool -- that's that 251 and a half feet; in other words, there's no storage in the flood pool, the Corps has to release water at the rates that I described earlier. They have to hit those flow targets. So if it's particularly dry, they have to release extra water to hit the Clayton target, to hit that 254 cubic feet per second, in the summer. So they're going to be releasing a little bit more water in order to do that, and that water is going to be generating electricity.

So really, the point that you're generating minimum electricity is probably right about now. The lake is not full. It's January, so they are only obligated to release 50 to 65 cubic feet per second, assuming the Clayton target at 184 cubic feet per second is being made by the intervening drainage area below

Falls Lake, and above Clayton. Does that make sense? So they're releasing less now because that's the way the targets are set, so we'd be generating somewhat less electricity. Whereas in the summer, the minimum release required is actually somewhat higher.

MR. WALDROUP: But -- this is can Waldroup for the record. The answer to your question, we will use fairly sophisticated computer models. We will look at a period of record and we will look through these periods where the demand for power is high, the demand for water is high, the generation potential is low, and we will consider that when we are doing our financial pro forma, to determine whether this is a viable project. So we'll not ignore the basic accounting.

MR. SENECAL: I just wondered. And the only reason I asked those questions, I hate going thirsty. You know? And I think a lot of people hate going thirsty for the sake of maintaining some flow way downstream.

MR. WALDROUP: Well, for the city's purpose, the project is intended not to change any of the uses. We awarded a private power generator, again, with -- ask for additional discretionary discharge. So our primary purpose is to preserve it for drinking water.

MR. SENECAL: Okay.

MR. COX: Now, you mentioned about selling CO2 credits.

MR. WALDROUP: Mr. Cox, yes.

MR. COX: Yes. And if you do that, you're essentially allowing someone else to put CO2 into the atmosphere. So that amount of CO2 you would be removing from the atmosphere, does that take that into account?

MR. WALDROUP: Well, it's true that we do want to look at the carbon market. But a little-known fact is the city, public utilities department, is one of the larger contributors of greenhouse gases in the region. The Neuse River wastewater treatment plant contributes about 23,000 metric tons of carbon equivalent a year. And it's entirely possible, even probable, that EPA's new regulation, which is currently targeted at 100,000 tons of carbon equivalent a year, will be challenged in court and they will have to drop that. And we are quite concerned that the Neuse River wastewater treatment plant will fall under this regulatory regime in the future. We would have to seek carbon offset credit on the market, or create it. And certainly, this project would be something that we would bank for our own needs, if regulated.

MR. COX: Okay, so it would allow us to

be able to emit more carbon dioxide from our waste treatment plant -- than the new regulations would allow?

MR. WALDROUP: That is the thought process.

MR. COX: Okay.

MR. WALDROUP: This is Kenny Waldroup, again, for the record. I think our Council will be very reluctant to sell those greenhouse gas carbon credits unless they are worth a lot of money. So they're just going to go on our balance sheet as one of those items that Council should consider when we're talking about the value of the project.

MR. COX: And those carbon credits are calculated dynamically, depending on the amount of electricity that we generate?

MR. WALDROUP: They would be calculated based on the EPA methodology, which I think is annual. There's several methodologies I looked at, but I think that's an annual total.

MR. COX: Okay.

MR. PALMER: Are there other questions or comments?

MS. PARKER: Sharron Parker. I was wondering about -- noise was one of the items that somebody else had asked about. What's the --

MR. PALMER: Can we show the video?

MR. WALDROUP: Yeah, let's show the video.

MR. PALMER: Is there anyway we can get the sound from this?

MR. WALDROUP: Reed Palmer, the gentleman who was giving the presentation, visited the operating facility at Jordan --

[PLAYS VIDEO]

MR. WALDROUP: Can you hear it? There's a hum.

VOICE: So it is noticeable.

MR. WALDROUP: It's noticeable at observation point at Jordan Lake, which is a little bit further than the observation point that is associated with Falls Lake visitors center. So he's at the Jordan Lake visitors center.

We're going to monitor this operation. We're going to take some sound readings. I'd like to try to duplicate that sound and the decibel level at the source over here at Falls and then go around and just see what it sounds like. But it is an engineering problem.

MR. SENECAL: I was just going to say. Are there ways to attenuate the sound issues?

MR. WALDROUP: Yes, and I don't think

that that was necessary in this project.

MR. PALMER: And just to comment, I was the one that was out there filming and taking pictures on Friday morning. And I certainly could hear the hum of generators but the birds were, you know, louder than the generator. And as soon as I walked a couple of feet on the other side of the dam and there was something between me and the generator, I couldn't hear anything. So if you're on the other side of the dam and its anything like what I experienced, you wouldn't hear anything.

MR. WALDROUP: Let's play - I know it's a very short videotape. Let's play it one more time so we can point out to the actual generator.

MR. COX: The thing is with our dam, there's a lot of people that use that side of the dam.

[PLAYS VIDEO AGAIN]

MR. WALDROUP: Okay, so there's one generator in place. We went with this design. Our project would be about 60 to 75 percent the size of this project. I'm looking at the engineers to make sure I'm correct.

VOICE: And at this point we're about at the closest point we can get to that generator, would you say?

MR. PALMER: Yeah. There's a trail from

the visitors center that walked down to the dam, much like there is a Falls Lake. So I could get a little bit closer but I'm sort of running, you know, I'm running tangent to it. I'm not getting a whole lot closer to the generator.

MR. SENECAL: Sound has a propensity to move up. What happens when you're down by the shore?

MR. PALMER: I can't say. I did not go down by the shore.

MR. WALDROUP: But we will do multiple recordings, investigations of the decibel level.

MR. SENECAL: The only reason I asked that last question about down by the shore is that, you know, one of the purposes of the lake is recreation. And I don't know what it would sound like down there but if, you know, it sounded like Boulder Dam -- I'm certain there would be a lot of upset anglers and boaters and what have you.

MR. WALDROUP: Understand, understand.

VOICE: Can you make that video available online?

MR. WALDROUP: I'm going to make every effort to attend to go up ahead and set up a city web page. I have people who are much more talented than I, and now that we have everything electronically I'm going

to ask them to do that, and I will provide that as a link on the web page.

VOICE: That would be good because it would be easier for everyone in the neighborhood to be able to go to the website and view this themselves instead of us trying to describe it.

MR. SENECAL: It's tough enough to try and get them here.

MR. WALDROUP: It's no problem. And I think it's entirely probable that I will try to duplicate some of these recordings, maybe go on the other side of the dam and see what it sounds like, and go up the shoreline a way, go down to the recreational area, which is closest to -- it would be closest to the generators, as we proposed it.

MR. TANT: Along those lines, on the sign-in sheet, make sure you signed in but on the column for presentation, if you indicated yes, we'll get you a copy of the meeting.

VOICE: Is everybody signed in?

MR. WALDROUP: Yes, sir? Your name for the record, please?

MR. WELCH: Yes, Randy Welch, I just had a question. Are the generators affixed outside of the tower or are they inside? That was what I didn't

quite understand.

MR. PALMER: They're fixed outside of the tower.

MR. WELCH: Submerged on the outside?

MR. PALMER: Well, the generator, as we saw, was above the lake level. But the shaft and the turbine is --

MR. WELCH: Well, the turbine I guess is a better word --

MR. PALMER: Yes, right.

VOICE: The generator is that box.

MR. WELCH: The turbines are outside of the tower?

MR. PALMER: Everything is outside of the tower, as it is now.

MR. WALDROUP: Water flows through the top and then enters the tower after it's moved through the turbine.

MR. PALMER: Let's show that again.

MR. WALDROUP: Mindful of everybody's time, because I realize it's getting late. Any -- well, any other questions? This is kind of an open issue. I'll be glad to come and visit again, any homeowners associations. We might even develop a day trip where we go over and look at the Jordan site, that might be a nice

thing.

MR. PALMER: So just to, you know, answer your question, so you know, the water level let's say is somewhere up here. And this is the shaft that connects up to the generator. That's not being shown in this figure. The water's entering here. It flows down, spins the turbine, and then it goes out through the tower, just like it does now. This stuff in gray already exists.

VOICE: So basically, there's a rod that extends from the turbine straight up to the generator.

MR. PALMER: Yeah, that's it right there.

MR. TANT: The generator is basically a motor turning backwards.

MR. WALDROUP: That's just one design we're looking at. There's another series of designs that we are considering which look something to me like window fans, that also fit on the back. Sir, for the record?

MR. SENECAL: Gene Senecal, River Oaks, NORCHOA. It was decided that, you know, that we're going to bag this and say "we're not going to do this, it's not feasible," can you go back three or four years from now, and reapply again maybe as circumstances change or as various metrics change?

MR. WALDROUP: Yes. Our concern is if somebody else asked for the permit from the city, the city withdraws and a private entity asked for the permit, there's a very limited window where we can compete. And after that window closes, then it's their permit to demonstrate, and maybe finalize over a two, or three, or four year period.

So there are opportunities to go back, and there also are opportunities for the city to lose a chance to go back. So we are going to research the go/no-go decisions very carefully, to ensure to ourselves that a no-go for the city is a very clear no-go for a private entity. And part of that is the requirements from these permitting and resource agencies, and ensuring that everything they demand of the city they will also demand of a private entity.

MR. PALMER: If there's no other questions or comments, we'll wrap it up. And I want to thank everybody for attending. We really appreciate your time, and your coming out here and telling us what you think about this.

MR. WALDROUP: Folks, you got my e-mail. Again, if you'd like me to come visit, just let me know and we'll set up something.

[MEETING CONCLUDED AT 7:58 P.M.]

STATE OF NORTH CAROLINA

COUNTY OF WAKE

C E R T I F I C A T E

I, Bryan Collins, notary public/court reporter, do hereby certify that this hearing was taken and transcribed under my supervision; that any and all witnesses were sworn or affirmed prior to their testimony; and that the foregoing pages, inclusive, constitute a true and accurate transcription of the hearing.

I do further certify that the persons were present as stated in the caption.

I do further certify that I am not of counsel for or in the employment of either of the parties to this action, nor am I interested in the results of this action.

This is the 6th day of February, 2012.

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Notary Public #200817700146